REMARKS

Claims 1-4, 7, 12-13 15, and 21 remain for consideration and are thought to be allowable over the cited art. The Applicants also request that the

The Office Action does not establish that claims 1-4, 7, 12-13, 15 and 21 are unpatentable under 35 USC §103(a) over "Erickson" (U.S. Patent No. 5,970,142 to Erickson) in view of "IBM-RNG" (IBM Technical Disclosure Bulletin "Integrated Circuit Compatible Random Number Generator"). The rejection is respectfully traversed because the Office Action fails to show that all the limitations are shown or suggested by the references.

Independent claims 1 and 12 include limitations of counting a first number of oscillations of a first oscillator on the FPGA during a predetermined time interval; counting a second number of oscillations of a second oscillator on the FPGA during the predetermined time interval; and generating a ratio between the first number and second number of oscillations, wherein the ratio is a fingerprint that represents an inherent manufacturing process characteristic unique to the FPGA. These limitations are clearly neither shown nor suggested by either of Erickson or IBM-RNG.

IBM-RNG's diagram clearly shows only one counter that counts the oscillations of one ring oscillator 2. The oscillations of IBM-RNG's second ring oscillator 4 are not counted; the output of the second ring oscillator 4 are sampled. The claim limitations clearly set forth that the oscillations of first and second oscillators are counted. Thus, IBM-RNG is not shown to suggest all the claim limitations.

The ratio observed by IBM-RNG is not that of counts of oscillations of the first and second ring oscillators 2 and 4. Rather, IBM-RNG simply observes that "the phase difference between the two ring oscillators is amplified by the ratio of the jitter oscillator frequency to the sampling oscillator frequency." IBM-RNG's "jitter oscillator" includes the combination of the first and second ring oscillators, and there is no circuitry shown or described that counts oscillations of two oscillators. Furthermore, the ratio observed by IBM-RNG is not the fingerprint. Rather, the sampled output of the second ring oscillator 4 is used as input to a feedback shift register. Thus, IBM-RNG is not shown to suggest the limitations of claims 1 and 12.

Furthermore, there is no apparent motivation for modifying IBM-RNG to count the oscillations of the two oscillators. As explained in paragraphs [0030] and [0031] of the present application the two oscillator counts and the ratio between the counts may be used to avoid fingerprint drift. In contrast, IBM-RNG's approach seeks to generate non-deterministic random binary numbers and describes a jitter oscillator arrangement in combination with a feedback shift register. IBM-RNG's approach seeks to "only use the jitter oscillator output as a seed for a pseudo-random shift register, which is capable of high statistical quality" in order to avoid the deterministic qualities of a conventional feedback shift register approach, from which "it is possible to predict future or past results once the structure of the device and one output are known." Thus, the claimed use of the ratio of oscillator counts is clearly not suggested by IBM-RNG since IBM-RNG's seeks non-deterministic values. Note that in the dependent claims the ratio/fingerprint is used for encryption.

Claims 2, 3, 4, and 7 depend from claim 1, and claims 13, 15, and 21 depend from claim 12 and are not shown to be unpatentable for at least the reasons set forth above.

The rejection of claims 1, 6-8, 12, and 20-22 over the Erickson-IBM-RNG combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the combination.

As requested by the examiner in a phone conversation on March 13, 2006, Applicant resubmits a copy of the reference originally cited at the filing of the application along with a copy of the Form 1449 filed with the reference. Applicant respectfully request the Examiner review this submission and supply an initialed 1449 for this reference.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Amendments and Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.
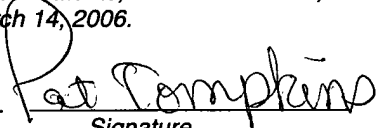
Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on March 14, 2006.

__Pat Tompkins__
Name   *Signature*